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PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Applicant	: Lindfors, Sven
App. No	: 10/615,332
Filed	: July 8, 2003
For	: METHOD AND APPARATUS FOR THE PULSE-WISE SUPPLY OF A VAPORIZED LIQUID REACTANT
Examiner	: Gambetta, Kelly M.
Art Unit	: 1792
Conf No.	: 8737

REPLY BRIEF

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Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Dear Sir:

This Reply Brief is submitted in response to the Examiner's Answer with a notification date of April 28, 2009. The Examiner's Answer was in response to the Appeal Brief filed February 23, 2009, appealing from a Final Rejection set forth in an Office Action mailed July 15, 2008.

Status of Claims begins on page 2 of this paper.

Grounds of Rejection to be Reviewed on Appeal begin on page 3 of this paper.

Arguments begin on page 4 of this paper.

Application No.: 10/615,332
Filing Date: July 8, 2003

STATUS OF CLAIMS

Claims 12-17, 19-26, and 30-34 are pending in this application. Claims 1-11, 18, and 27-29 were canceled. Claims 12-17, 19-26, and 30-34 were finally rejected by the Examiner, and are the subject of this appeal. No amendments were offered after final rejection.

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

A. Murakami in View of Modisette and Bondestram

Claims 12-14, 19-23, 26, and 30 stand rejected as unpatentable over U.S. Patent No. 6,126,994 to Murakami et al. ("Murakami") in view of U.S. Patent No. 3,981,156 to Modisette et al. ("Modisette") and further in view of U.S. Patent No. 7,063,981 to Bondestram et al. ("Bondestram").

B. Murakami in View of Modisette, Bondestram, and Kaloveros

Claims 15 and 16 stand rejected as unpatentable over Murakami, Modisette, and Bondestram in view of U.S. Patent No. 5,376,409 to Kaloveros et al. ("Kaloveros").

C. Murakami in View of Modisette, Bondestram, Kaloveros and Sturm

Claims 17, 31, and 32 stand rejected as unpatentable over Murakami, Modisette, and Bondestram in view of Kaloveros and further in view of U.S Patent No. 6,178,925 to Sturm et al. ("Sturm").

D. Murakami in View of Modisette, Bondestram, and Van Buskirk

Claims 24 and 25 stand rejected as unpatentable over Murakami, Modisette, and Bondestram in view of U.S. Patent No. 5,882,416 to Van Buskirk et al. ("Van Buskirk").

E. Murakami in View of Modisette, Bondestram, and Gauthier

Claims 33 and 34 stand rejected as unpatentable over Murakami, Modisette, and Bondestram in view of U.S. Patent No. 6,00,330 to Gauthier ("Gauthier").

All of the rejections thus depend upon a combination of Murakami, Modisette, and Bondestram.

ARGUMENTS

In the Final Office Action mailed on July 15, 2008, the Examiner finally rejected Claims 12-17, 19-26, and 30-34. Claims 12-14, 19-23, 26, and 30 stand rejected as unpatentable over U.S. Patent No. 6,126,994 to Murakami et al. ("Murakami") in view of U.S. Patent No. 3,981,156 to Modisette et al. ("Modisette") and further in view of U.S. Patent No. 7,063,981 to Bondestram et al. ("Bondestram"). Claims 15 and 16 stand rejected as unpatentable over Murakami, Modisette, and Bondestram in view of U.S. Patent No. 5,376,409 to Kaloyeros et al. ("Kaloyeros"). Claims 17, 31, and 32 stand rejected as unpatentable over Murakami, Modisette, and Bondestram in view of Kaloyeros and further in view of U.S. Patent No. 6,178,925 to Sturm et al. ("Sturm"). Claims 24 and 25 stand rejected as unpatentable over Murakami, Modisette, and Bondestram in view of U.S. Patent No. 5,882,416 to Van Buskirk et al. ("Van Buskirk"). Claims 33 and 34 stand rejected as unpatentable over Murakami, Modisette, and Bondestram in view of U.S. Patent No. 6,00,330 to Gauthier ("Gauthier").

In the Examiner's Response to the Appeal Brief filed February 23, 2009, the Examiner stated that:

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Murakami et al. to include recycling the unvaporized liquid material back into the storage container and vaporizer as taught by Modisette et al. in order to prevent loss of valuable material.

Examiner's Response, page 5.

Appellants continue to disagree with the Examiner's reasoning. As discussed in the Appeal Brief, Appellants submit there is no reason in Murakami, Modisette, or the other cited references to modify or use the structure disclosed in Murakami to return the unvaporized liquid to the storage container or return the unvaporized liquid to the vaporization chamber, as recited in Claim 12. Further, as discussed in the appeal brief, Murakami teaches away from such a modification. Thus, it is unreasonable to expect that one of ordinary skill in the art would make the modifications suggested by the Examiner.

In the Examiner's Answer, the Examiner stated that the Applicants cannot attack references individually where the rejections are based on combinations of references. Examiner's Response, page 11. However, a prior art reference must be considered in its entirety,

i.e., as a whole, *including portions that would lead away from the claimed invention*. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984) (emphasis added). Appellants respectfully submit that the Examiner has not responded to the arguments that Murakami teaches away from the combination suggested by the Examiner. It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983). Thus, the combination suggested by the Examiner is improper because Murakami teaches away from such a combination.

The Examiner found that "there are no structural differences between that of Murakami and the inventions as claimed, therefore they are capable of performing the invention." Examiner's Response, page 11. Appellant's note that the pending claims are directed to methods and not an apparatus. In response to the Appellant's arguments, the Examiner further stated that:

The applicant points out that Murakami uses a cold trap to trap the liquids and does not recycle them. However, a cold trap is merely a vessel which condenses and hence removes extra vapors from the system before they travel to and possibly damage the vacuum equipment that is evacuating the chamber. Hence Murakami already removes these vapors, and with the motivation provided in Modisette, along with any other motivation one of ordinary skill in the art would have to reuse materials such as economical reasons, producing less waste, etc. this shows that in combination the references teach the features of the claim. A cold trap merely stores the unwanted vapors; it is certainly within the capabilities of one of ordinary skill in the art to recycle the stored vapors given the teachings of Murakami and Modisette.

Examiner's Response, page 11-12.

Appellants respectfully disagree with the Examiner's findings and reasoning. Murakami is concerned with preventing condensation of the vaporized reactants and purging the system of all unvaporized liquid reactants to prevent decomposition of unvaporized reactants to form solids that clog the piping. *See* col. 2, ll. 9-15; col. 7, ll. 12-16; col. 7, line 67 to col. 8, line 18; col. 7, ll. 35-44; col. 9, ll. 14-21. Murakami is particularly concerned with the exposure of the liquid reactants to oxygen. *Id.* Modifying Murakami to collect the remaining highly reactive reactants in the cold trap and then returning these materials to the storage container 4 would greatly increase the chance of exposing the highly reactive reactants to oxygen, thereby resulting in contamination and clogging of the pipes. This is the problem that Murakami seeks to avoid.

Col. 9, ll. 18-21. Thus, the modification suggested by the Examiner is likely to frustrate the purpose of Murakami.

If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Thus, the combination is improper for at least this reason.

The Examiner further found that:

Though Murakami et al does not explicitly disclose the unvaporized liquid flowing from discharge passage 52 into reservoir 4, one of ordinary skill in the art would recognize the utility of connecting a discharge passage from the evaporator into the reservoir, especially given valve VB and line 20, would be to drain unvaporized liquid back into the reservoir that would eventually travel back to the vaporizer.

Examiner's Response, page 5.

Appellants continue to disagree with this reasoning. As noted in the Appeal Brief, Murakami is concerned with reactants clogging the piping of the liquid supply apparatus. *See* col. 7, ll. 54-58. Murakami merely discloses common connections and passages between the discharge passage 52 and the container 4. Within these common connections are line 20 and valve VB. These components are not used to return liquid to the container, but rather to facilitate purging materials from the lines to prevent clogging of the pipes of the liquid supply apparatus. The common passages serve another purpose, specifically, as stated at col. 5, lines 48-55, Murakami discloses that:

In the present embodiment, considering a case that the residual liquid, etc. cannot be sufficiently drawn off by draw through the discharge passage 52, a purge (washing) liquid supply passage 64 is connected to the second pressure liquid supply passage 24B through a pressurization passage 10 which can be disconnected by a valve operation. Purge (washing) liquids can be alcohol, such as ethanol, methanol, etc., and organic solvents, such as hexane, etc.

Murakami discloses that valve VB is used to provide isolation during purge (washing). For example, Murakami also discloses at col. 7, line 62 to col.8, line 11:

The liquid material is generally an organic metal material. The organic metal material is very reactive and is readily oxidized or solidified in contact with air, which cause clogging of the piping. Accordingly, it is very difficult to handle

the mouth ring, etc. for connecting/disconnecting the reservoir which are readily exposed to air.

First, the first and the second opening/closing valves VA, VB of the reservoir 4 in FIG. 1 are closed to place the reservoir out of communication. The first shut-off valve V1 of the second pressure liquid supply passage 24B is opened, the second shut-off valve V2 thereof being closed. The first and the second discharge shut-off valves V5, V6 of the branched passages 54A, 54B communicated with the discharge passage 52 are closed, the third discharge shut-off valve V7 of the branched passage 54C and the main opening/closing valve V4 being opened.

Thus, Appellants respectfully submit that the skilled artisan would not be motivated to use the valve VB and line 20 as found by the Examiner. Accordingly, Appellants respectfully request withdrawal of the rejections for this reason.

For at least the reasons discussed above, Applicants submit that the pending claims are not obvious in view of the various combinations of Murakami, Modisette, and Bondestram. The Examiner has not provided any reason to combine the references and has ignored the teachings away from the combination in the art as a whole. Hence, because obviousness has not been established, Applicants request that the rejection under 35 U.S.C. § 103 be removed and that Claims 12-17, 19-26, and 30-34 be allowed.

Conclusion

In view of the foregoing arguments distinguishing Claims 12-17, 19-26, and 30-34 over the art of record, Appellant respectfully requests that the rejection of these claims be reversed.

Respectfully submitted,

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Dated: June 26, 2009

By: 

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